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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/865,236	05/25/2001	Yiping Fan	US018070	2624

7590 08/27/2004

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EXAMINER

AHN, SAM K

ART UNIT PAPER NUMBER

2637

DATE MAILED: 08/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/865,236

Applicant(s)

FAN, YIPING

Examiner

Sam K. Ahn

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-17 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to because the drawings filed on 11/30/01 labels Fig.3 as "Prior Art", which is described in the specification as the present invention.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 1-17 are objected to because of the following informalities:

In claims 2-12 and 14-17, line 1, respectively, delete "wherein" and insert "
wherein".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 12 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 12 recites wherein *said first lowpass ADC comprises a flash-type ADC*. In paragraph 24 of the specification describes wherein *if ADC were a flash-type converter, only one converter is necessary, rather than a pair of converters*.

Therefore, the specification does not describe wherein two ADC's are used and further wherein the first ADC is a flash-type ADC, as recited.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4,7,10,13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Walley et al. USP 6,301,287 B1 (Walley).

Regarding claims 1,13 and 15, Walley discloses a method and an apparatus of a receiver [see Fig.2] comprising
a radio frequency mixer [341(I) and 341(Q)],
an intermediate frequency filter [342(I) and 342(Q)] having a lowpass filter;
an amplifier [343(I) and 343(Q)];
a first lowpass analog-to-digital converter [362(I)] directly connected to said amplifier;
a second lowpass analog-to-digital converter [362(Q)] directly connected to said amplifier;
and a digital signal processor [364 for further processing] connected to said first and second lowpass analog-to-digital converters. [note col.4, line 35 – col.5, line 57]

Regarding claim 2, Walley teaches all subject matter claimed, as applied to claim 1. Walley further teaches wherein said receiver forms a part of a communications device. [note col.1, line 10 – col.2, line 38]

Regarding claim 3, Walley teaches all subject matter claimed, as applied to claim 2. Walley further teaches wherein said communications device comprises a cellular phone. [see Fig.2 and note col.2, lines 47-50 wherein the figure is found in a handset]

Regarding claim 4, Walley teaches all subject matter claimed, as applied to claim 2. Walley further teaches wherein said communications device comprises a wireless device. [see Fig.2 and note col.2, lines 47-50 wherein the figure is found in a handset]

Regarding claim 7, Walley teaches all subject matter claimed, as applied to claim 1. Walley further teaches a radio frequency filter, an intermediate frequency filter [342(I) and 342(Q)].

Regarding claim 10, Walley teaches all subject matter claimed, as applied to claim 1. Walley further teaches said amplifier comprises a variable gain amplifier [343(I) and 343(Q)]. (note col.4, lines 35-61)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walley et al. USP 6,301,287 B1 (Walley) in view of Eidson et al. USP 6,256,477 B1 (Eidson).

Regarding claims 5 and 6, Walley teaches all subject matter claimed, as applied to claim 2. As described previously, Walley teaches a wireless receiver detecting and demodulating spread spectrum signals. However, Walley does not explicitly disclose wherein the system may comprise a CDMA or TDMA device. Eidson also teaches a receiver detecting and demodulating spread spectrum signals (see Fig.8B), and further teaches wherein the receiver may be implemented in a CDMA and TDMA networks requiring a CDMA and TDMA device. Therefore, it would have been obvious to one skilled in the art at the time of the invention to implement Walley's receiver in a CDMA and TDMA networks for the purpose of improving signal reception by generating signal quality values, as taught by Walley. (note col.2, lines 20-37)

6. Claims 8,9,11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walley et al. USP 6,301,287 B1 (Walley) in view of Wu et al. USP 6,639,946 B2 (Wu).

Regarding claims 8 and 9, Walley teaches all subject matter claimed, as applied to claim 7 or 1. Walley, as described previously, teaches an intermediate frequency filter [342(I) and 342(Q)] to provide channel selectivity (note col.4,

lines 35-61). However, Walley does not explicitly teach wherein said filter comprises a surface acoustic wave filter. Wu teaches surface acoustic wave (SAW) filter (20 in Fig.2) coupled to amplifier then to digitize the signal. Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Walley's system by using SAW filter in intermediate frequency filter [342(I) and 342(Q)] for the purpose of properly digitizing the signal received wherein the SAW filter provides enough bandwidth and further does not introduce significant noise or distortion to intermediate frequency signals, as taught by Wu. (note col.1, line 60 – col.2, line 23)

Regarding claims 11 and 16, Walley teaches all subject matter claimed, as applied to claim 1 or 15. Walley, as described previously, teaches said first and second lowpass analog-to-digital converters. [362(I) and 362(Q)] However, Walley does not explicitly teach wherein said ADCs comprise Sigma Delta ADCs. Wu teaches converting analog signal to digital by implementing Sigma Delta ADCs. (note col.1, lines 13-57) Therefore, it would have been obvious to one skilled in the art at the time of the invention to implement digitizing analog signals using Sigma Delta ADCs for the purpose of supporting high speed input signals as Sigma Delta ADCs run at higher clock speed, as taught by Wu. (note col.1, lines 13-57)

7. Claims 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walley et al. USP 6,301,287 B1 (Walley) in view of Conklin et al. USP 6,587,530 B1(Conklin).

Regarding claims 12 and 17, Walley teaches all subject matter claimed, as applied to claim 1 or 13. Walley, as explained previously, teaches analog to digital converters. However, Walley does not explicitly teach wherein the function of ADCs may be implemented using a flash-type ADC. Conklin teaches receiving signal and digitizing the signal by using a flash-type ADC. (see 63 in Fig.5D) Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Walley's ADC and implement a flash-type ADC for the purpose of increasing processing speed as the flash-type ADC provides n number of outputs.

Allowable Subject Matter

8. Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and claim objections.
9. The following is a statement of reasons for the indication of allowable subject matter: Present application discloses a receiver comprising a radio frequency mixer, a filter, an amplifier, two ADCs and a DSP. Further, the ADCs are directly coupled to the amplifier. Closest prior art, Walley in combination teach all subject matter claimed. However, prior art does not teach wherein direct sampling comprises sampling a first

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channel at a predetermined time; and sampling a second channel a quarter of the intermediate frequency carrier period after said sampling of said first channel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Sam Ahn** whose telephone number is **(703) 305-0754**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Jay Patel**, can be reached at **(703) 308-7728**.

Any response to this action should be mailed to:

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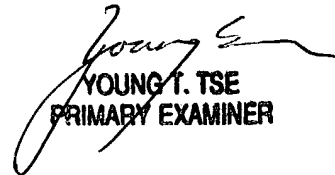
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(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Sam K. Ahn
8/21/04


YOUNG T. TSE
PRIMARY EXAMINER